American Foundryman

AMERICAN FOUNDRYMEN'S ASSOCIATION · FOUNDED 1896

VITIES

October 1939

A.F.A. Influence Abroad

POST-WAR developments of international relations with the foundry technical associations of other countries are of special interest to members, owing to the prominent part that the A.F.A. has played in the inception and maintenance of these relations.

In April, 1919, the late A. O. Backert, then president of the A.F.A., visited Great Britain and was received as an honored guest by the British Foundrymen's association, now the Institute of British Foundrymen. On that occasion Mr. Backert, among many expressions of good will, extended an invitation to British foundrymen to attend the American convention and exhibition to be held the following year in Philadelphia. In August, 1920, at the British association's conference in Glasgow, a unanimous resolution extending greetings to the A.F.A. was voted by the meeting, and arrangements were made for an exchange of papers between the British and American institutions. In September of the same year, several prominent members of the British association visited Philadelphia. The first official exchange paper was presented by the A.F.A. to the British association at their Blackpool conference in 1921. Since then, these exchange papers have grown, and the technical associations of most countries are taking part.

The idea of staging international congresses was mooted in Birmingham, England, in 1922, and, as a result, the first international foundry congress was held in Paris in 1923. The next step was the establishment of the International Committee of Foundry Technical Associations, founded in 1925, on which the A.F.A. has been continuously represented since 1926.

Pioneers of the early days in the establishment of international relationships were: A. O. Backert, Stanley G. Flagg, Jr., H. Cole Estep, Oliver Stubbs, E. V. Ronceray, Emile Ramas, now deceased, and also F. J. Cook, Paul Ropsy, J. Leonard, Marcel Remy, and V. C. Faulkner.

V. Delport

Vincent Delport, European
Representative, A. F. A.

It is of interest at this time to have a statement from Mr. Delport written just before the outbreak of present hostilities in Europe. Mr. Delport, European representative of the A.F.A., is also European Manager, The Foundry. He has served as chairman of the International Committee of Foundry Technical Associations and has represented the A.F.A. at the many European and International Foundry Congresses held abroad in recent years. At the 1939 meeting of the French Foundry Technical Association the gold medal of that association was awarded Mr. Delport for his activities in endeavoring to develop good will and relationship between the foundry associations of the various countries.

American Foundryman

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October, 1939

Volume I — Number 16

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Sparrows Point, Md., Plant, Bethlehem Steel Co. To Be Visited by Baltimore-Washington Conference Group

Baltimore-Washington Regional Foundry Conference in October

AN able committee of foundrymen and members of the Association have developed a very complete and interesting program of sessions and plant visitations for the First Baltimore-Washington Regional Foundry Conference. This conference, designed especially to discuss the most practical processes, is to be held at the Lord Baltimore Hotel, Baltimore, Friday and Saturday, October 20 and 21.

The various committees developing the conference details are under the direction of an executive committee headed by Paul Lane, American Hammered Piston Ring Div., Koppers Co., with J. E. Crown, Naval Gun Factory, Washington, serving as vice-chairman. W. C. Frantz, Flynn & Emrich Co., Baltimore, heads the program committee; H. Schaufus, Rustless Iron & Steel Co., the plant visitation committee; J. J. Lacy, James J. Lacy Co., Baltimore, the reception committee and registration committee, and T. N. Mosely, Norfolk & Western R. R. Shops, Roanoke, Va., the publicity and attendance committees.

The meeting schedule given below shows a very well balanced program assuring all attending of hearing many interesting discussions by well-know foundry authorities. The plant visitation committee has lined up a large number of plants which will open their doors to those desiring to see what other foundrymen are doing.

Tentative Schedule of Sessions

Friday, October 20

Registration and Reception, Lord Baltimore Hotel.

A. M. 9:30—*Open Meeting.*
Address of Welcome: S. J. Cort, General Manager, Bethlehem Steel Co.; R. E. Kennedy, Secretary, American Foundrymen's Association, Chicago.

A. M. 10:30—*Cupola Practice.*
Chairman: Max Kuniansky, Lynchburg Foundry Co., Lynchburg, Va.
Speaker: Donald J. Reese, International Nickel Co., New York City.

A. M. 10:30—*Bronze Melting.*
Chairman: H. B. Gardner, Bureau of Standards, Washington, D. C.
Speaker: R. J. Keeley, Ajax Metal Co., Philadelphia, Pa.

P. M. 2:00—*Alloy and High Test Cast Irons.*
Chairman: Paul S. Lane, American Hammered Piston Ring Div., Koppers Co., Baltimore, Md.
Speakers: V. A. Crosby, Climax Molybdenum Co., Detroit, Mich.; R. G. McElwee, Vanadium Corp. of America, Detroit, Mich.

P. M. 4:00—*Cement Molding.*
Chairman: J. A. Crown, Naval Gun Factory, Washington, D. C.
Speaker: J. C. Pendleton, Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

P. M. 8:00—*Sand Control.*
Chairman: C. M. Saeger, Jr., Bureau of Standards, Washington, D. C.
Speakers: H. W. Dietert, Harry W. Dietert Co., Detroit, Mich.; W. G. Reichert, American Brake Shoe & Foundry Co., Mahwah, N. J.

Saturday, October 21

A. M. 10:00—*Gating and Risering.*
Chairman: C. L. Frear, Bureau of Engineering, Navy Dept., Washington, D. C.
Speaker: *Gray Iron*—Max Kuniansky, Lynchburg Foundry Co., Lynchburg, Va.
Non-Ferrous—To be announced.

P. M. 12:30—*Cupola Maintenance and Refractories* (Round Table Luncheon Discussion).
Chairman: C. E. Bales, Ironton Firebrick Co., Ironton, O.
Speakers: *Cupola Maintenance*—Donald J. Reese, International Nickel Co., New York City; *Refractories*—A. V. Leun, Bethlehem Steel Co., Bethlehem, Pa.

P. M. 2:00—*Steel, Feeding and Desulphurization.*
Chairman: H. F. Taylor, Naval Research Laboratory, Washington, D. C.
Speakers: *Desulphurization*—G. S. Evans, Mathieson Alkali Works, New York City; *Feeding*—Speaker to be announced.

Washington Monument in Historic Baltimore (First monument erected in honor of George Washington. Cornerstone laid in 1815.)

A Safety and Hygiene Program in a Small Foundry-II

By Peter E. Rentschler,* Hamilton, Ohio

This is the second of a three section paper presented before the Safety and Hygiene Session of the 43rd Annual Convention, Cincinnati, O., May 15-18. The first section appeared in the September issue. This, the second article, covers plant safety. The author describes steps taken to bring about an effective safety campaign which was conducted through the efforts of a plant safety and hygiene committee. National, state and local organizations assisted by issuing safety posters and signs and conducting contests.

WE were having such excellent results with the health educational program that we decided it might be well to embark on an organized safety campaign in conjunction with what we had been doing, stimulated by the Hamilton Industrial Safety Council and the Gray Iron Founders' Society. Therefore, we sought the further cooperation of the Division of Safety and Hygiene, Ohio Industrial Commission, in the person of Safety Engineer Charles G. Barth. We joined the National Safety Council, taking out a complete Industrial Membership. We gave considerable study to the suggestions of both these sources, and then embarked on a program that the writer personally felt would be best suited for our plant.

Notice, in form of a letter dated September 8, 1938, was sent to each employee at his home, calling attention to the safety program being inaugurated September 13, 1938, at a shop meeting scheduled specifically for this program. This letter also announced the tentative program for an "Open House" for employees and their families on October 8, 1938.

Program Inaugurated

On September 13, 1938, we inaugurated this intensive safety campaign at the shop meeting of all employees, shop supervisors and office personnel with Mr. Barth as the headline speaker. The writer spoke to the group, stating that "Safety First" was not to be merely a slogan, but a definite policy, and, that with the assistance of the Division of Safety and Hygiene, Ohio Industrial Commission and the National Safety Council, we hoped to improve our experience. The writer explained our membership in the National Safety Council, which provides six new safety posters weekly, monthly safety leaflets, and the monthly booklet, "The Safe Worker," for each employee, and that other safe practices and health pamphlets will be available. Two copies of the monthly National Safety Council magazine, "Safety News," would come to us, one copy to be passed around to the foremen, and the second to the members of the Safety and Hygiene Committee. Later, one copy would go into the rack labeled "Magazines for Employees" near the time clock and the other filed in our Safety Department. All this was to be in addition to posters and leaflets previously furnished by the Ohio Industrial Commission.

Organization of Safety Committees

The writer then announced the organization of a General Safety Committee, which would be divided into two groups: The Foreman's Group of seven, and the Workmen's Group of eight. The workmen's committee was to be rotated, starting the third month, so that two new members would be added monthly and two dropped, with each member serving three months. Each three months then there would be an entirely new committee. Meetings were to be scheduled once a month on the first Tuesday of the month and held by the two groups independently, and then jointly. The Workmen's Group meetings were to be scheduled at 10 o'clock in the morning, the Foreman's Group at 11 o'clock in the morning, and immediately after lunch at 12 o'clock there was to be a combined meeting of the two groups. The writer acted as general chairman of the Safety and Hygiene Committee, with Donald McDaniel, vice president of our company, as chairman of the foremen's committee, and Eldon Altman, personnel director, employment manager, and now also safety director, as chairman of the workmen's committee. The writer appointed committee members and set the first organization meeting for the two committees two weeks later for Tuesday, September 27, 1938.

At the workmen's meeting, no foreman was to be in attendance and no company representative without an invitation, except our safety director, unless it happened that the writer was to come in on the meeting.

The writer explained the use of small 3x5-in. white cards "Recommendation to Safety and Hygiene Committee" which were passed to each person present and asked the cooperation of employees in using them signed or unsigned. These cards were to be turned in to a member of the Safety and Hygiene Committee, safety director, or dropped in a box placed at the time clock.

Mr. Barth, in his enthusiastic address, stressed the need for joint cooperation between employees

*President, The Hamilton Foundry & Machine Co.

and management for any successful safety and hygiene program and announced that the Industrial Commission's Certificate of Safety Merit had been awarded to the Hamilton Foundry & Machine Company Supervisory Forces and Employees as group winner in the Hamilton Industrial Safety Campaign January 1, 1938, to June 30, 1938. In accepting the award on behalf of the company, the writer expressed his thanks to all for their splendid cooperation that enabled them to win this certificate, and expressed the hope they would win the last six months' certificate and the trophy for 1938.

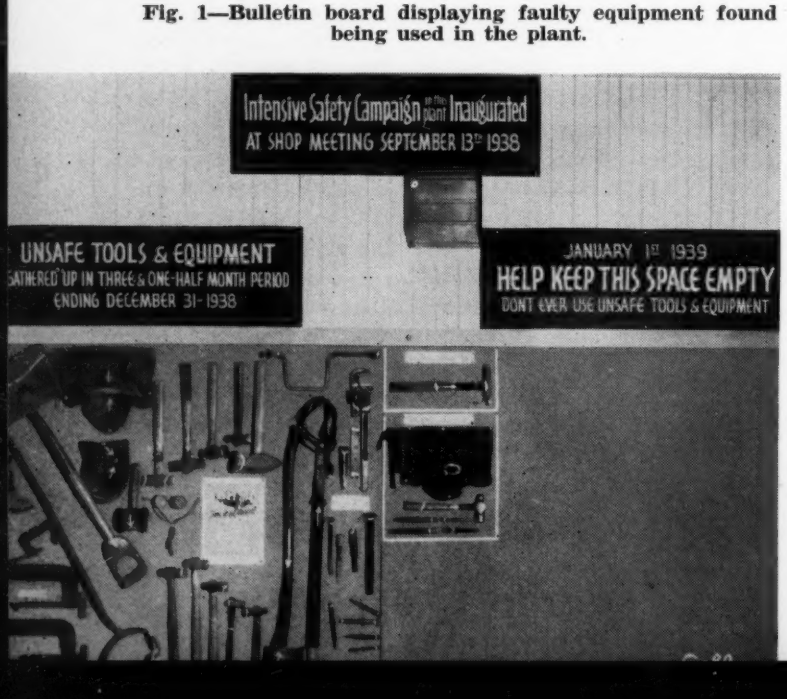
Before the meeting adjourned, the author spoke on the company's plans for an Open House on October 8, 1938, for employees, their families and their friends and asked the cooperation of all to house-clean the plant.

Use of Bulletin Boards and Exhibits

To get our program away to a good start, we had erected new bulletin boards at strategic places about the plant where the posters would hit the men directly in the eye as they pursued their natural routine during the day, whether walking to their work, whether at their work, whether idling during noon hour, whether in the locker room, in the toilet rooms, or in the shower room. We put up plenty of small bulletin boards 30x36-in. made of composition with a wood border and painted gray so that these boards were of identical size throughout the plant. The National Safety Council posters augmented the regular Ohio Industrial Commission monthly display posters that we had been putting up around the plant. Additional metal safety and accident prevention signs were purchased and posted immediately; in the locker rooms, toilet rooms, shower room, on walls through out the plant and at work places and machines.

The open house clean-up made an opportune and an efficient start for our intensive efforts, because some needless hazards and untidy dangerous conditions automatically were eliminated in this clean-up. At the same time, recommendation cards came in and these recommendations, wherever possible, were promptly followed.

Fig. 1—Bulletin board displaying faulty equipment found being used in the plant.



Locker Inspections

A regular monthly locker clean-up was inaugurated. Notices were posted on the bulletin boards that lockers were to be emptied and left open over the week-end so they could be washed, painted and disinfected. The notice stated that lockers not open and emptied would be forced and the contents thrown out. On the first inspection after due notice, two lockers still were locked at the appointed time, although some were unemptied even though unlocked. Three barrels of dirty clothes, rags, shoes, etc., were discarded from the open lockers, and the two locked ones were forced and the contents thrown out. The established practice now is that on the last working day of the last week of the month, the lockers must be emptied for disinfecting. A notice is posted to remind all employees. No further "over-sight" has been experienced with locked or unemptied lockers on a clean-up week-end. The locker room adjoins the shower room and, at the inauguration of the regular locker inspection a disinfectant foot bath was installed at the entrance to shower room to prevent athlete's foot.

The First Meeting of the Safety and Hygiene Committee

At the first scheduled meeting of the Safety and Hygiene Committee on September 27, 1938, Mr. Barth attended to help with the organization, and the writer came in only for the initial joint meeting of both committees. Fortunately, the morning mail brought in the actual "Certificate of Merit Award" which our employees had won for the best record in Group 5, foundries and foundry products, in the Hamilton Industrial Safety Council Campaign for the first half of 1938 as previously discussed. We had been informed previously of this good record, but had had no formal recognition until this date, and it was quite apropos to have this award at the initial meeting of our safety committee.

The meeting also gave the writer an opportunity to elaborate on the "Open House" plans for Saturday, October 8, and to inform the committee that our open house had been expanded to cover Monday, October 10, as a day for designers, engineers and buyers of iron castings, that is customers and prospects. While we were not going to operate the foundry on the day that employees, their families and friends were to be in attendance, we did expect to operate partially on Monday for the outside visitors. We wanted to operate in such a manner as to create no hazards to the visitors.

Organizes Open House

On September 29, 1938, invitations in the form of a letter were mailed to all employees, inviting them to the open house on October 8, and with it a printed letter dated September 27, 1938, referring to "Specific Sections of the Laws of the State of Ohio Relative to Safety of Yourself and Others

When Employed in the Foundry Industry and Which Are Obligatory for You to Obey." Our open house program was built primarily around our safety and hygiene work. Dr. Smith was to stress the health portion of the program, and Mr. Barth, safety.

Literature and Exhibits

Dr. Smith sent a series of 20 large informative tuberculosis posters that were posted about the assembly room, and the Ohio Department of Safety and Hygiene sent safety posters and safety leaflets for distribution. The Safety Shoe representative furnished an exhibit of various types of steel toed safety shoes, including dress oxfords. Other suppliers of equipment, such as leggings, goggles, respirators, safety ladders, fire extinguishers, etc., sent items for display. At the 1938 Cleveland Convention of the A.F.A. the writer had been very much interested in the display of protective safety and health devices and appliances in the A.F.A. booth, and having this in mind, we built an electrically lighted display case as a permanent educational case entitled "Protective Safety and Health Devices Used in This Plant." Above the case we placed a permanent display of safety and accident prevention signs. In this case were types of goggles for molders, cupola men, grinders, chippers, leggings, safety toe shoes, both whole and sectioned to show construction, a respirator and filter pad before and after use, a blaster's hood, a healthguard mask showing filter before and after use, a cupola man's helmet, non-silica partine, steel grit, salt tablets and a dispenser with tablets. We showed other items, a hospital stretcher or litter, the heavy duty portable vacuum cleaner, the oil dust layer, a fire extinguisher, a safety ladder, a sectional ladder with safety shoes, safety car door opener and a safety car mover.

We also had a display of unsafe tools and equipment showing hammers with chipped heads, split handles, chisels with mushroom heads, or with chips broken out, bad extension cords, ripped leggings, etc.

The exhibit of foundry materials used to produce castings attracted a lot of attention as did the exhibit of typical equipment for squeezer molding.

The health and safety literature available for distribution must have been of interest because hundreds of pieces were taken by the visitors.

The following is a list of literature supplied by various organizations for distribution at the open house:

Department of Safety and Hygiene
Ohio Industrial Commission

1. Information Regarding the Workmen's Compensation Law of Ohio.
2. Organization and Operation.
3. Practical First Aid Rules.
4. Would You?
5. Ask Yourself.
6. Ladder Rules.
7. Good Housekeeping.

Fig. 2—Locker room showing entrance to wash and shower room (right rear).

8. Safety Rules for Handling Materials.
9. What Reporting of Accidents Means to You.
10. The Plant's Safety Is Your Profit.
11. Safety on the Job and Off the Job.
12. Industrial Dermatitis—Its Causes, Treatment and Prevention.
13. Think on These Things.
14. The Accident Racket in Industry.
15. General Safety Precautions for Traveling Cranes
16. Accident Prevention and First Aid Suggestions.

Metropolitan Life Insurance Company

1. Tuberculosis.
2. The Great Imitator (Syphilis).
3. Calling All Drivers—A Guide to Better Motoring.

Prudential Life Insurance Company

1. Our Babies.
2. Cancer Must Be Cured Early.
3. First Aid.
4. What to Eat.
5. Food After Forty.

Ohio Department of Health

1. Educational Circular 114—A Few Facts About Gonorrhea.
2. Educational Circular 115—A Few Facts About Syphilis.
3. Educational Bulletin 130—Some Facts About Venereal Diseases.
4. Tuberculosis—What You Should Know About It.
5. Contact From Whom to Whom? (Tuberculosis).

6. Who Next? (Tuberculosis).
7. The Tuberculin Test (Tuberculosis).

Mercy Hospital Free Venereal Disease Clinic:
Syphilis—Its Cause—Its Spread—Its Cure (U. S. Public Health Service Folder No. 1).

Reprints Purchased by Ourselves
July, 1936—Readers Digest, "Why Don't We Stamp Out Syphilis?"

A letterhead program gave the details of the tour of the plant and what was to be viewed. After registration and a view of the exhibits, the visitors attended Dr. Smith's lecture and movies. Lollipops were distributed by my two youngest sons to everyone at the movies to help keep the children quiet. My oldest son showed a "Pop-Eye" film after Dr. Smith's program.

Souvenirs

As the visitors left the movies, they had their choice of one of 14 different souvenir dog cast iron paper weights, but since there were no restrictions, most everyone wanted one of each kind—and they almost got them, because 7000 souvenir dogs were distributed to the 711 registered for the day.

The visitors then toured the plant in groups with supervisors as guides. At the half way mark, the core department, ice cream bars were available to all.

In the morning, the City Manager, Russell P. Price of Hamilton, addressed two groups—those in the exhibition room, and a few minutes later a group in the assembly room. Mr. Barth also spoke.

Picture Record of Open House

We took 2000 feet of 16 mm. movies on the open house days and over 100 still pictures. The movies were edited and made available for later display, and all employees were very anxious to see these movies, gauged by the number of requests to show them.

We posted the photographs on the bulletin boards and any individual who appeared in any of the groups was given a print.

The writer felt from the interest we were having in our movies, perhaps we could make our own safety and hygiene movie that would be applicable specifically to the foundry industry. It also would be a personal part of our own operations because all actions would take place in our plant with our own employees as actors. This seemed to be a simple job, but it was not as easy as we thought. We discussed this project with Herbert A. Reece, Meehanite Metal Corp., who is very much interested in cinema photography. Mr. Reece agreed to help take the movies and Mr. Barth agreed to serve as the safety engineer character. On November 9 and 10, a first attempt was made. The results were most gratifying when these pictures were shown to the employees. However, we learned that the scenes must be long, because the men were so absorbed in seeing their fellow workers and pals as movie stars, that they did not observe the unsafe or proper practice that was being illustrated. Movies of this type must be filled with titles to call the pertinent points specifically to the viewer's attention.

Fig. 3—Tuberculosis skin test given to employees and their immediate families.

Inspection of Safety Equipment

We were beginning to find on our inspection for unsafe tools and equipment, that some of the protective safety and health equipments in use were not in perfect shape. A preliminary inspection of the equipment in use was made on December 9 and a complete recheck was made on December 12. All equipments that were out to each man were examined, reissued, relisted and receipted for by the man. The paymaster was given a copy (Form R83A) of the payroll authorization for deduction in the event equipments were not returned, the employee was given a copy of the receipt he had signed with the Ohio State Safety Laws on the reverse side, and the storeroom-keeper kept his own record of the receipt for the material. The old Form (R-83) that had been used since 1932 was abandoned.

It was surprising to note the amount of equipment that was not in perfect condition. For instance, leggings had holes across the instep, goggles had head bands too loose to properly hold them in position, etc.

Improvement in Use of Safety Shoes

Since our safety meeting and open house, safety shoes were being adopted by the men very rapidly. Sales for October, 1938, were 12 pairs; for November, 1938, 11 pairs; with an extra good start in December. This was accomplished by liberalizing the credit extension, so that shoes could be paid for in four weekly payments by payroll deductions until March 1, 1939. Heretofore, only two weeks had been allowed for payment. Shoes are sold at our storeroom at 10 cents per pair over cost. Forty-four pairs of safety shoes were actually sold by the end of December, which was more than were sold in the entire previous twelve months' period.

You might be interested to know that 121 pairs of safety shoes were sold in the first six months' period after the inauguration of our safety cam-

paign, and on April 1, 1939, 64.5 per cent of our men were wearing safety shoes.

The National Safety Council advertised Stewart H. Holbrook's book, "Let Them Live," published by the MacMillan Company, New York City, so early in December, 1938, we purchased two copies, one for the use of our foremen, and the other for the use of members of the Safety and Hygiene Committee. Now these two books are being loaned to shop employees.

Acknowledgment of Cooperation

We were having such splendid cooperation from our group generally as well as from our Safety and Hygiene Committees specifically, that we decided we would give a small basket of fruit to each employee, in appreciation of his cooperation in this campaign. So on December 22, 1938, at the end of the work day, we presented each employee with a basket of fruit and a letter of appreciation, along with one of our small 1939 handy calendars that had just been mailed to our entire customer and prospect mailing list of approximately 2500.

We were not very busy during the holidays, so we scheduled at 1:30 p.m., December 30, 1938, a day the plant was not working, the first showing of the open house movies at our assembly room, and restricted this showing to our employees only. Seventy per cent or 136 employees other than foremen and supervisors, attended. At this same performance, the Hamilton Foundry Safety and Hygiene movies taken the previous month were shown.

Safety Shoe Education

The safety shoe representative had made arrangements to bring a safety toe shoe educational sound movie into the community for safety and personnel directors, purchasing agents, etc. We suggested that he have his meeting at our plant in our assembly room and we would invite the Hamilton Industrial Safety Council membership to see this movie as well as our open house and safety and hygiene movies. One of our objects in scheduling this meeting was that we would have this safety toe shoe sound film shown in the afternoon for our employees as they left from work. We scheduled two performances, one at 3:30 p.m. and one at 4:30 p. m. for the employees that quit on the two different scheduled hours. In the evening at the meeting scheduled at 7:30 p.m., C. M. Allen, safety director, American Rolling Mill Co., Middletown, Ohio, was the principal speaker, and a sound safety film was shown through the courtesy of this company.

Tuberculin Tests

The local health authorities were scheduling tuberculin tests throughout the public, parochial and county schools during January. It occurred to us that perhaps our employees might be interested in having members of their families tuberculin tested. Therefore, the writer contacted Dr. C. J. Baldridge, city health commissioner, who thought that this would be an excellent continuation of our program. Several employees seemed quite enthused when the writer spoke to them about tuberculin tests. As a result, we sent a letter to our employees at their homes on January 12, 1939, offering the tuberculin test and asking them to return reservations so that the number to take the test would be known. We stated that the tests would be held on Monday, January, 30, Wednesday, February 1, and Friday, February 3, and that all employees to be tested would have to come for the three nights. That was necessary because the first innoculation, on Monday, would be a mild "shot" which must be read 48 hours later, on Wednesday. If there was no reaction, a stronger "shot" would have to be given and the results again read 48 hours later, on Friday. The letter said that on Friday, the reading of the test would be explained. We advised our employees that the open house movies and several comedy films would be shown. Again lollipops were distributed to keep the youngsters from crying when they were being tested.

Family X-Ray Service

We made arrangements with Mercy Hospital for members of our employees' families to be x-rayed in groups at a reduced rate, and we decided to absorb the cost in excess of $4.00 per plate. We made arrangements for our employees to pay us for x-rays for their families at $1.00 per week, as we paid Mercy Hospital immediately so as to earn the special group rate. There was no cost to either the individuals or the company for the vaccine, as this was furnished by the local health department.

On the evening of February 1, we took movies of the tuberculin testing to add to our picture collection.

February 1 was National Social Hygiene Day throughout the United States, and the author talked to the group who came for skin tests on the social hygiene program in the community and the physical examination requirements of our own plant. It gave the writer an excellent opportunity again to talk on blood testing and to recommend that the members of the employees' families also be tested. The February, 1939, issue of "Herald of Social Hygiene" was distributed to all in attendance.

Meeting on Tuberculin Tests

On Friday, February 3, after all of the tests were completed, each individual tested was given a report of the tests. Dr. W. J. Smith gave an explanation of the tuberculin test and showed a number of chest plates as an exhibit to interpret the readings. He used the writer's own chest plates that had been taken over a number of years to show a healthy chest, whereas the writer had had a terrific reaction from the second shot of the skin test. Other plates, unidentified, showed various tuberculosis conditions, heart conditions, etc.

On February 7, 1939, a letter was mailed to all employees giving the results of our tuberculin testing program—64 positive and 64 negative, and the relationship of each person tested to an employee.

On March 22, 1939, the Hamilton Industrial Safety Council had a safety rally at the Hamilton

High School auditorium, at which the 1938 awards were given. Unfortunately for us, our experience during the second half of 1938 was such that our good experience for the first half, during which we were first in the foundry group, was nullified. This was because one individual who had been slightly burned, had not gone to the first aid room for treatment, and 12 days later reported with a bad infection that necessitated considerable loss of time and treatment expense. The Industrial Commission was most helpful in the investigation of this case. Their field investigator came to bring to the attention of this individual the necessity for promptly reporting injuries. At the industrial rally, everyone registered and we got a list of our employees that were present. We posted this list on our bulletin board. Thirty-two members of our organization, 13 per cent, had gone to the meeting, which we felt was a good percentage. The author knows that this was the largest percentage representation from any one plant in the city.

Birmingham Outing Groups Have Fun In Sports Events

Birmingham Steps Out

By J. A. Bowers*, Birmingham, Ala.

A RECORD attendance of around 450 chapter members and other local and out-of-town foundrymen and their friends participated in the annual picnic and barbecue put on by the chapter at Pineview Beach, Saturday, September 16. The outing this year was in the nature of a celebration of the rapid progress and national prominence attained by the chapter during the past years. In addition to a number of events held, indicated by the accompanying pictures, there was a boxing match between two colored boys, refereed by Casey Jones, Attalla, Ala., which was enjoyed very much by all. The greatest credit for the success of the meeting goes to Lynn Odgen, Stockham Pipe Fitings Co., chairman of the outing committee, and to the members of his committee.

Chapter to Put on Meeting at Chattanooga, Tenn.

The regular October meeting of the chapter will be held October 13 at the Tutwiler Hotel, Birmingham. The subject for the evening will be "Foundry Practices," with four 15-minute talks on each of the following: Malleable, Gray Iron, Non-Ferrous and Steel Founding. Preceding the technical session, an inspirational talk will be given by W. D. Moore, president, American Cast Iron Pipe Co.

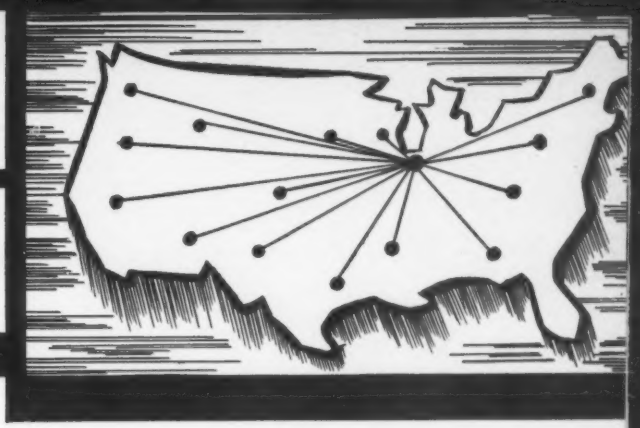
A new venture for the chapter will be a special all-day meeting at Chattanooga, Tenn., Friday, October 20. With headquarters at the Read House, registration will begin at 9:30 a. m. An invitation to participate is extended to all foundrymen and their friends with the day's program as follows:

10:00—Plant Visitation
12:30—Luncheon
2:00—Round Table Discussion on Cupola Practice; Gray Iron, Non-Ferrous and Steel Founding
4:00—Session on "Grinding in the Foundry"
6:00—Dinner—Speaker to be announced.

*American Cast Iron Pipe Co. and Secretary-Treasurer, Birmingham District Chapter.

More Birmingham Outing Groups

Chapter Activities



Northeastern Ohio Learns About Steel

By Pat Dwyer*, Cleveland, O.

CHAIRMAN ERNEST F. HESS, Ohio Injector Co., Wadsworth, Ohio, welcomed approximately 140 members and guests to the first fall meeting, 1939, of the Northeastern Ohio Chapter A.F.A. at the Tudor Arms (formerly the Cleveland Club) Sept. 14. The program included a talk on the blast furnace by B. E. Pheneger, general superintendent, Central Furnace, Docks and Coke Works, American Steel & Wire Co., Cleveland, and a magnificent movie picture in technicolor showing the evolution of steel from the ore to the finished product, presented through the courtesy of the United States Steel Corp.

Mr. Pheneger described the construction and operation of the blast furnace and the chemical reactions in converting the ore to pig iron. Function of the blast furnace is that of preheating the ores, reduction of the metallic oxides and melting the resulting pig iron and slag in one continuous operation in a vertical stack. Raw materials include ore, fuel, flux and air. To make one ton of iron requires approximately 2 tons of ore, 1 ton of fuel, ½ ton of flux and 4 tons of air. A modern 700 tons per day blast furnace consumes approximately 63,000,000 cubic feet of air in each 24-hour period. The air is heated to a temperature between 1100 and 1500° F. and enters the furnace through the tuyeres near the bottom at a pressure of about 15 lbs. per sq. in. Daily water consumption on the furnace is about 11,000,000 gallons. Iron is tapped from the furnace at intervals of about 5 hours. Chemical analysis is made from a sample taken at each tap. Daily product of the furnace is 700 tons of iron and 345 tons of slag. In addition about 200 pounds of flue dust is collected for each ton of iron produced. Operation of the furnace and character of the slag exert an important influence on the character of the resulting iron.

The picture "Steel-Man's Servant," with running comment by Edwin C. Hill, opened with scenes in ore mines, loading docks and freighters and continued through the unloaders, blast furnaces, bessemers and open hearths to the rolling mills making rails, rods, beams, plates and pipes.

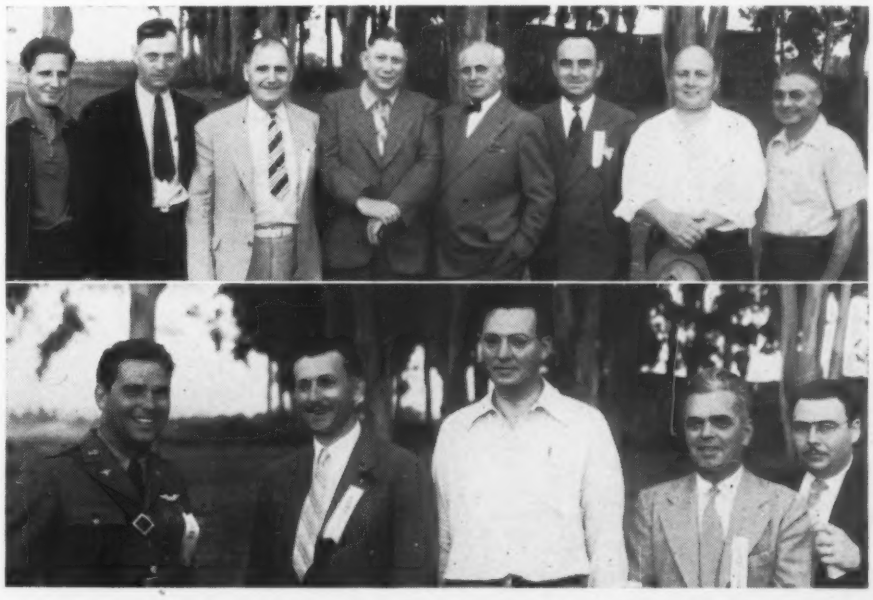
*Engineering Editor, THE FOUNDRY.

Southern California Hold Annual Stag Picnic

By W. F. Haggman*, Los Angeles, Calif.

THE second annual stag picnic of the Southern California Chapter was held on July 29th at the Lakewood Country Club, Long Beach, California. For the athletes, there was an afternoon of golf, baseball, tennis, horseshoe pitching and general track and field events. Western and old gang songs were furnished by Pete Valentine, Del Monte Sand Properties, and his traveling troubadours, for the men who chose to sit in the coolness of the patio. The highlight of the day was the tie baseball game between two of the chapters' best teams. The game turned out to be an exhibition of clowning and some surprising plays. Glen Merrefield, Warman Steel Casting Company, and Herman Young, Martin Iron Works, were the umpires for the

*Foundry Specialties Company and Secretary, Southern California Chapter.



(Above)—Southern California Chapter Officers at Annual Outing.
(Below)—Outing Committee Members.

Southern California Members Have Fun at Outing

day's game. After the steak dinner, four boxing bouts were staged. Then followed a two-hour vaudeville show, awarding of athletic and door prizes. Low gross in the golf tournament was won by Glen Waterbury, Alhambra Steel Products, Inc., and he received a fine trophy cup. The horseshoe pitching contest was won by Jack Eberhardt, Kay-Bunner Steel Products, Inc. The prizes for these events were donated by more than thirty firms in the foundry and metal industries.

The entertainment committee that put on this fine stag were as follows: W. D. Bailey, Pacific Metals Company, *chairman;* Arthur Barker, Barker Foundry Supply Company; George Emmett, Los Angeles Steel Casting Company; Joe Brunner Jr., Kay-Brunner Steel Products, Inc.; W. McLean, Snyder Foundry Supply Company; C. E. Findley, A. P. Green Fire Brick Company; and Don McCrystal, Hercules Foundries, Inc.

Foundry Exhibit Dedication to Feature Chicago Regional Conference

A MOST ambitious program and one which should prove of the widest interest has been developed for the three-day regional foundry conference sponsored by the Chicago Chapter, November 9, 10 and 11. The sessions of this conference will be held in the meeting rooms of the Museum of Science and Industry, located on the lake front in Jackson Park, Chicago. A special feature of the conference will be the dedication of the working foundry exhibit of the Museum, one of the most outstandingly attractive exhibits of the many which will be housed in the Museum. The sessions of the conference will be held during the day and evening, with the day-time sessions covering steel, malleable, gray iron and non-ferrous foundry practices as indicated by the program given below.

Dr. H. W. Gillett, chief technical advisor, Battelle Memorial Institute, Columbus, Ohio, honorary member of A.F.A. and one of the world's foremost metallurgical authorities, is to be the speaker at a general session November 9. The conference dinner to be held November 10 will feature an address by a nationally prominent speaker. The conference on Saturday, the 11th, is to be devoted to a special meeting for students of engineering schools and technical high schools, with an illustrated talk by F. A. Melmoth, Detroit Steel Castings Company, explaining the place of castings in industry.

In arranging the program, the committee has allowed time for inspection of the foundry exhibit as well as the many others of the Museum. This foundry exhibit has been developed through the cooperation of a chapter committee under the chairmanship of C. E. Westover, now chapter chairman and superintendent, Burnside Steel Foundry Company. Serving with Mr. Westover are W. R. Bean, Whiting Corp., Harvey, Ill.; A. C. Christensen, National Engineering Co., Chicago; W. L. Hartley, Link-Belt Co., Chicago; W. H. Payne, Pittsburgh Electromelt Furnace Corp., Chicago, and H. W. Johnson, Greenlee Foundry Co., Chicago.

For the exhibit, an actual operating foundry, the Museum has received splendid contributions of the most up-to-date equipment from many foundry equipment manufacturers. Melting will be done in a cupola and in an electric furnace, with molding and cleaning operations performed under the most modern conditions. In addition, still exhibits of castings and molds have been supplied through the cooperation of the Steel Founders' Society of America, the Gray Iron Founders' Society and the Malleable Founders' Society. This exhibit, which will be permanent, will be viewed by thousands of visitors to the Museum and will undoubtedly play a big part in familiarizing the general public with castings and casting processes.

The conference program committee is headed by L. H. Rudesill, Griffin Wheel Co., assisted by H. W. Johnson, Greenlee Foundry Co., vice-chairman, and B. L. Simpson, National Engineering Co., as secretary, the other members being J. D. Burlie, Western Electric Co.; George B. Stantial, Illinois Malleable Iron Co.; A. W. Gregg, Whiting Corp., Harvey; B. J. Aamodt, National Malleable & Steel Casting Co.; H. E. Orr, Burnside Steel Foundry Co.; L. F. Lottier, Peoples Gas Light

Members and Guests, Southern California Chapter at Outing, July 29, Lakewood Country Club

& Coke Co., and L. F. Hartwig, Chicago Malleable Castings Co. This committee has arranged many attractions in addition to the technical sessions, one of these being that during the days of the conference there will be a continuous showing of industrial and foundry films.

The program of events follows:

Thursday, November 9

Registration, Museum Lobby.

A. M. 10:00—Simultaneous Sessions.

Gray Iron Section—"Casting Defects as Related to Sand Conditions" by H. W. Dietert, Harry W. Dietert Co., Detroit, Mich.

Non-Ferrous Section—"Founding of Aluminum Alloys" by H. J Rowe, Aluminum Co. of America, Cleveland, O.

Malleable Section—"Duplexing and Its Various Ramifications" by F. C. Scheiber, Whiting Corp., Harvey, Ill., and C. C. Lawson, Wagner Malleable Iron Co., Decatur, Ill.

Steel Casting Section—"Non-Destructive Testing" by C. W. Briggs, Steel Founders' Society of America, Cleveland, O.

P. M. 2:00—Simultaneous Sessions.

Gray Iron Section—"Modern Gray Iron Melting Practice" by Carl H. Morken, Carondelet Foundry Co., St. Louis, Mo.

Non-Ferrous Section—"Nickel-Silver Alloy Founding" by D. M. Curry, International Nickel Co., Detroit, Mich.

Malleable Section—"Modern Annealing Methods in Metallurgy" by John Jans, Holcroft & Co., Detroit, Mich., and R. O. Flansburg, Belle City Malleable Iron Co., Racine, Wis.

Steel Casting Section—Inspection of foundry exhibit.

P. M. 6:00—Group Dinners.

P. M. 8:00—General Meeting.

Formal presentation of foundry exhibit. Acceptance by Dr. Philip Fox, Director of Museum of Science and Industry.

Speaker: Dr. H. W. Gillett, Battelle Memorial Institute, Columbus, O.

Friday, November 10

A. M. 10:00—Simultaneous Sessions.

Gray Iron and Non-Ferrous Sections—Inspection of foundry exhibit.

Malleable Section—An open shop practice meeting sponsored by the Malleable Founders' Society. Subject: "Finishing Malleable Castings." Discussion Leader: Enrique Touceda, Malleable Founders' Society, Cleveland, O.

Steel Casting Section—"Cracking and Hot Tear Formation in Steel Castings with the Use of Aluminum as a Deoxidizer" by H. H. Blosjo, Minneapolis Electric Steel Casting Co., Minneapolis, Minn.

P. M. 1:00—Malleable Section Inspection of foundry exhibit at the Museum.

Museum of Science and Industry Where Chicago Regional Conference Will Be Held

P. M. 2:00—Simultaneous Sessions.

Gray Iron Section—"The Role of Common Alloys in Gray Iron Castings" by Dr. A. DiGuilio, University of Detroit, Detroit, Mich.

"The Uses of Phosphorus in Present Day Cast Irons" by Dr. J. T. MacKenzie, American Cast Iron Pipe Co., Birmingham, Ala.

Non-Ferrous Section—"Brass and Bronze Alloy Foundry Practice" by C. V. Nass, Fairbanks, Morse & Co., Beloit, Wis.

Steel Casting Section—"Final Deoxidation of Cast Steel" by Walter Crafts, Electro Metallurgical Co., New York City.

P. M. 3:00

Malleable Section—Continuation of morning shop practice meeting.

P. M. 7:00—Conference Dinner.

Presiding: C. E. Westover, Chapter Chairman.

Introduction of H. S. Washburn, President, A.F.A.

Address by nationally recognized speaker.

Saturday, November 11

Morning—Student meeting and student inspection of exhibits. Address to students by F. A. Melmoth, Vice President, Detroit Steel Casting Co., Detroit, Mich. "The Place of Castings in Industry."

Afternoon—Football game, Northwestern vs. Purdue, Dyche Stadium, Evanston (Advance reservations for tickets for the football game should be made through A. W. Gregg, Whiting Corp., Harvey, Ill.).

Northern California Sponsors Day at Exposition

By G. L. Kennard*, San Francisco, Calif.

WHAT a day, what a day! Could anyone even dream of foundrymen putting on a "Day at the Fair," and being, to any degree, responsible for pulling an attendance of 68,319 (official figures), which ranked high in the lower brackets for attendance, in spite of the fact

*Secretary, Northern California Chapter.

Northern California Members at Exposition

Some of the Ladies and Members of Northern California Chapter Attending A.F.A. Day at Exposition

that half of the 58 counties in California were running county fairs, and the State Fair drawing a record crowd on the last of its 10 days' celebration.

Our registration staff was on duty in relays throughout the day in the Mines and Metals Building, having accepted the offer of the United States Steel Corporation to use their facilities to receive guests. Everyone who registered was given a souvenir badge and sent on his way to have a good time. The only demand made on them was that at least a few of them gather at the South Elephant Tower, in the evening, to give opportunity to our camera fiends to do some shooting.

Sand Control

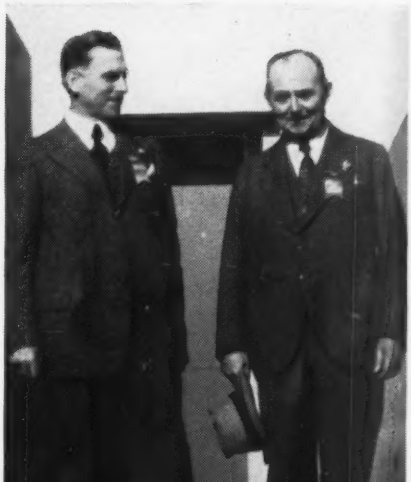
By W. W. Young*,
Stanford University, Calif.

THE technical part of our September 8 meeting of the Northern California Chapter, A.F.A., was a very interesting and instructive talk on "The Sand in Your Foundry," by Harry W. Dietert of the Harry W. Dietert Co., Detroit, Mich. Mr. Dietert declared that sand was the most important factor in successful foundry operation. He showed the importance of selecting a sand suitable for the particular needs of each class and type of castings. Mr. Dietert discussed the relative importance of the different sand tests. He pointed out how size, shape and distribution of sand grains, amount of bond, fines, impurities and temper effected the green and dry strength, hot strength, permeability, heat resistance, deformation, expansion and contraction of the sand. Mr. Dietert used slides to show defective castings. He discussed the causes and cures of such casting defects as scabs, blows, drops, pin holes, rat-tails, etc.

Mr. Dietert's talk was thoroughly enjoyed and intently followed by the large crowd present. After the formal talk, members plied Mr. Dietert with questions in order to clear up obscure points in their own minds.

*Stanford University.

C. J. P. Hoehn (left), past Chairman, and C. M. Henderson, first Chairman, Northern California Chapter, Get Together at Exposition.



Quad City Sponsors Regional Day Meeting

THE Quad City Chapter on Friday, October 20, will be host to many foundrymen attending an all-day regional foundry meeting. The registration will start at 8 a. m. at the LeClaire Hotel, Moline. This will be followed by a morning and afternoon of plant visits to the many industrial plants and foundries of the Moline, Davenport and Rock Island area. Joining with the Quad City Chapter, under the chairmanship of Herman Alex, Rock Island Arsenal, and participating in the program will be the Northern Iowa Foundrymen's Association and the Northern Illinois-Southern Wisconsin A.F.A. Chapter.

The committee on arrangements is under the chairmanship of that well-known veteran foundryman, "Capt." Bancroft. Assisted by his committee, he has arranged plant visits to the Formall plant, International Harvester Co. and to the plants of the John Deere Company and the Rock Island Arsenal. The luncheon and dinner meeting programs are as given below:

Friday, October 20

A. M. 8:00 — Registration, LeClaire Hotel, Moline.
Plant Visits.
P. M. 12:30—Luncheon.
Speaker: Col. Norman Ramsay, commanding officer, Rock Island Arsenal.
Topic: Industrial Mobilization.
Afternoon—Plant Visits.
Golf—Short Hills Country Club.
P. M. 6:30—Dinner.
Speaker: W. H. Doerfner, manager, Saginaw Malleable Iron Div., General Motors Corp., Saginaw, Mich.
Topic: Modern Founding.

New Chapter Officers

H. W. Dietert
Chairman
Detroit

G. J. Landstrom
Chairman, Northern Illinois-
Southern Wisconsin

M. F. Doty
Vice Chairman
Michiana

G. P. Phillips
Vice Chairman
Chicago

Michiana Holds First Outing

IDEAL weather was the order of the day at the first annual outing of the Michiana Chapter held Saturday, September 9, at the Christiana Country Club, Elkhart, Ind. With the most pleasant surroundings for an outing, many took the opportunity to indulge in 18 or more holes of golf with low score going to W. V. Johnson, Oliver Farm Equipment Co., South Bend. Others took part in a bait casting contest, horseshoe pitching contest and an exciting soft ball game, either as participants or as interested spectators. The evening was completed with an excellent dinner in the club house, followed by a floor show. There were 200 members and guests in attendance at this well handled affair, with credit going to the outing committee under the chairmanship of W. A. Bachman, New York Central R. R. Co., for handling in a very competent manner the many details.

Mr. Bachman presided at dinner at which time Chapter Chairman A. C. Arbogast, Northern Indiana Brass Co., Elkhart, and program committee Chairman George Stoll, Bendix Products Corp., South Bend, were introduced and discussed chapter plans for the coming year. In addition Garnet Phillips, vice-chairman, Chicago Chapter, was introduced and made an announcement of the Chicago Chapter outing. Mr. R. E. Kennedy, A.F.A. secretary, extended greetings from the home office.

Sefing to Give Lectures Before Central New York Chapter

FRED G. SEFING, well-known metallurgist of the International Nickel Company, New York City, has been secured to present a series of lectures on "Elements of Metallurgy for the Gray Iron Foundryman," to be presented before the members of the Central New York Chapter. The series will consist of four talks beginning with the regular chapter meeting, October 13, Hotel Onondaga, Syracuse, N. Y. The other lectures will be given at subsequent monthly meetings.

Mr. Sefing is well qualified to present this discussion as he is an experienced teacher, having

C. R. Gregg
Treasurer
Southern California

J. A. Bowers
Secretary-Treasurer
Birmingham

W. A. Phair
Secretary, Metropolitan
New York-New Jersey

Robert Frankl
Treasurer
Cincinnati

New Chapter Officers

New Chapter Officers

J. Morgan Johnson
Secretary-Treasurer
Quad City

G. K. Minert
Secy.-Treas., Northern
Illinois-Southern Wisconsin

J. R. Wark
Secretary
Buffalo

J. H. Tressler
Secretary
Northeastern Ohio

been connected for years with the Engineering Department, Michigan State College, E. Lansing, Mich., at which time he was instrumental in starting the annual regional foundry conferences which have been held for many years at the University in cooperation with the Detroit Chapter.

St. Louis Holds Safety and Hygiene Meeting

By J. W. Kelin,* St. Louis, Mo.

WITH our recently elected chapter chairman, L. E. Everett, Key Company, presiding, the first meeting of the St. Louis Chapter was held September 14 at the York Hotel. The splendid meeting and excellent attendance indicated the start of a banner year. To Charles Maull, apprentice, Semi-Steel Casting Co., Thomas Ross, David Ranken School, and chairman chapter apprentice committee, presented the A.F.A. certificate for Mr. Maull's winning one of the places in the 1939 A.F.A. Apprentice Molding Contest. Mr. Ross also announced plans for a foundry course to be held at the Ranken School in cooperation with the chapter.

Other announcements were made concerning the three-day regional conference at the Hotel Jefferson, October 5-6-7, and an extensive meeting to be held later on at Kansas City. The main speaker of the evening was E. O. Jones, A.F.A. Director of Safety and Hygiene, who talked on foundry safety and hygiene programs, illustrating his talk with a film from the Hamilton Foundry & Machine Co., Hamilton, Ohio.

*Federated Metals Div., American Smelting & Refining Co., and Secretary-Treasurer, St. Louis District Chapter.

October Chapter Meeting Calendar

October 2
Metropolitan New York-New Jersey
Essex House, Newark, N. J.
R. G. McElwee, Vanadium Corp. of America, Detroit.
"Some Alloy Additions to Cast Iron"

✦ ✦

October 5-6-7
St. Louis
Hotel Jefferson
Regional Foundry Conference

✦ ✦

October 6
Buffalo
Hotel Touraine
F. G. Sefing, International Nickel Co., New York City
"Alloys in Castinas"

✦ ✦

October 9
Chicago
Medinah Club
Dr. Phillip Fox, Museum of Science and Industry

✦ ✦

October 10
Michiana
Hotel Oliver, South Bend
Pat Dwyer, THE FOUNDRY, Cleveland
"Gates and Risers"

October 10
Northern Illinois-Southern Wisconsin
Hotel Hilton, Beloit, Wis.
E. L. Roth, Motor Casting Co., Milwaukee
"Job Evaluation"

✦ ✦

October 13
Northern California
Sequoia Country Club, San Francisco
Golf and Outing

✦

Central New York
Hotel Onondaga, Syracuse
F. G. Sefing, International Nickel Co., New York City
"Cast Iron Metallurgy"

✦

Metropolitan Philadelphia
Engineers Club
Emile Pragoff, Jr., Hercules Powder Co., Wilmington, Del.
"Cores"

✦

Birmingham
Hotel Tutwiler
Round Table discussion on malleable gray iron, non-ferrous and stove founding

October 19
Detroit
Hyler's Restaurant, Fisher Building
W. R. Jennings, John Deere Tractor Co., Waterloo, Ia.
"Pattern and Molding Equipment"

✦ ✦

October 20
Quad City
LeClaire Hotel, Moline
All-day Meeting, Plant Visitation and Technical Sessions

✦

Special Meeting
Reed House, Chattanooga, Tenn.
Sponsored by the Birmingham Chapter.
Day of plant visitation, sessions and dinner

✦

Wisconsin
Hotel Schroeder, Milwaukee
W. W. Rose, Gray Iron Founders' Society, Cleveland
"How Do You Sell Your Castings?"

✦ ✦

October 20 and 21
Regional Foundry Conference
Lord Baltimore Hotel, Baltimore
Regional foundry Conference Baltimore-Washington-Virginia district.

New Members

Company Members

International Harvester Co., Auburn Works, Auburn, N. Y. (J. D. Grant, Works Supt.)

International Harvester Co., Indianapolis, Ind. (Indianapolis Works)

James Manufacturing Co., Fort Atkinson, Wis. (H. F. Wescott, Foundry & Galvanizing Div.)

Quandt Chemical Co., San Francisco, Calif. (Winthrop Martin.)

Standard Brake Shoe & Foundry Co., Memphis, Tenn.

Personal Members

Frank W. Brey, Foundry Engineer, Scott Atwater Foundry, Minneapolis, Minn.

Luther Broaddus, Precision Grinding Wheel Co., St. Louis, Mo.

Elmore C. Brown, Engineer, Whiting Corp., Harvey, Ill.

G. Pearson Browne, District Sales Manager, Semet-Solvay Co., Cleveland, Ohio.

R. L. Brown, Vice-President, Sales Manager, Apex Smelting Co., Chicago, Ill.

Wm. Buckler, Supt. of No. 2 Foundry, Allis Chalmers Manufacturing Co., West Allis, Wis.

John Henry Champion, Foundry Supt., Nordberg Manufacturing Co., Milwaukee, Wis.

Harry S. Enderlein, President, H. G. Enderlein Co., Philadelphia, Pa.

Robert Fischer, Time Study Man, Falk Corporation, Milwaukee, Wis.

C. W. Fredenburg, Salesman, Goris & Company, Chicago, Ill.

E. C. Gilmour, Sales Engineer, Pangborn Corporation, Kirkwood, Mo.

Charles A. Green, Foundry Engineer, Sorbo-Mat Process Engineers, St. Louis, Mo.

Benjamin Hard, Foreman, St. Louis Steel Casting Co., Normandy, Mo.

George W. Higgins, Steel Melting Dept., National Malleable & Steel Castings Co., Cicero, Ill.

J. E. Holtman, Works Manager, American Manganese Steel Div., American Brake Shoe & Foundry Co., Denver, Colo.

Arthur Hutchinson, Canadian Sales Rep., Foundry Services, Inc., Toronto, 6, Ont.

H. V. Johnson, Experimental Dept., American Cast Iron Pipe Co., Birmingham, Ala.

T. F. Kiley, Engineer, Mechanite Metal Corp., Cleveland Heights, Ohio.

Stanley Kirn, President, M. L. Kirn & Bro., Philadelphia, Pa.

Leo Klafke, Foundry Supt., Western Foundry Co., Chicago, Ill.

Chester Kondy, Metallurgist, St. Louis Steel Casting Co., Richmond Heights, Mo.

Harry E. Ladwig, Asst. to General Supt., Allis Chalmers Manufacturing Co., Milwaukee, Wis.

Anthony Lebesch, General Foreman, Allis Chalmers Manufacturing Co., Milwaukee, Wis.

James Leisk, Metallurgist, Western Foundry Co., Chicago, Ill.

Francis T. McGuire, Metallurgist, Sibley Machine & Foundry Corp., South Bend, Ind.

J. S. McKesson, Pig Iron Sales Agent, American Steel & Wire Co., Lakewood, Ohio

Fred G. Metzger, Chief Engineer, Cleveland Quarries Co., Cleveland, Ohio.

M. E. Meyerson, President, St. Louis Testing Laboratory, Inc., St. Louis, Mo.

Albert Nabke, Foreman, Allis Chalmers Manufacturing Co., Milwaukee, Wis.

A. O. Nilles, Griffin Wheel Co., Kansas City, Kans.

H. R. Rost, Salesman, Semet-Solvay Co., Cincinnati, Ohio

Charles Schaeffer, Foreman, St. Louis Steel Casting Co., Wellston, Mo.

William H. Spencer, Manager, Foundry Div., Wilkening Manufacturing Co., Philadelphia, Pa.

Anthony Stephenson, Coreroom Foreman, Allis Chalmers Mfg. Co., Milwaukee, Wis.

Paul Vogel, Foundry Engineer, Allis Chalmers Manufacturing Co., Waukesha, Wis.

Howard C. Waldron, Asst. Foundry Supt. and Metallurgist, Nordberg Mfg. Co., Milwaukee, Wis.

W. E. Watson, General Employment and Apprentice Supv., Allis Chalmers Mfg. Co., West Allis, Wis.

Kermit P. Young, Asst. Foreman in Coreroom, Stockham Pipe Fittings Co., Birmingham, Ala.

Foreign Members

Acieries de Haine-Saint-Pierre & Lesquin, Haine-Saint-Pierre, Belgium

Leon Greenberg, Managing Director, Industrial Steel Pty., Ltd., Sydney, N. S. W., Australia

Gordon Keech, Keech Castings Pty., Ltd., Sydney, N. S. W., Australia

C. E. McLean, Director, McLean & Scorer Pty., Ltd., St. Peters, N. S. W., Australia

Paulo Gomes Dos Reis, Chief of Engineering Staff, Bianchi & Cia., Ltd., Sao Paulo, Brazil, S. A.

Announcement has been made that the Machine Tool Show, which was to have been held October 4 to 13, has been postponed indefinitely and with it the Machine Tool Congress sessions planned for the evenings during the Show period. This has necessitated the cancelling of the castings exhibit and session planned for that week by the A.F.A.

Abstracts

Note: **The following references to articles dealing with the many phases of the foundry industry, have been prepared by the staff of *American Foundryman,* from current technical and trade publications.**

When copies of the complete articles are desired, photostat copies may be obtained from the Engineering Societies Library, 29 W. 39th Street, New York, N. Y.

Core Making

PRACTICE. *"Why Not Make Better Cores?",* by L. P. Robinson, *The Foundry,* vol. 67, no. 9, September, 1939, pp. 33, 80. Four specifications should be followed in choosing core sands and are outlined as: sand should be reasonably clean, uniform in size, open enough to allow free passage of gas and must be refractory enough to withstand the action of metal. Specifications for the choice of oil, used as a binder, are also listed. The importance of using a definite ratio of oil to sand and then sticking to that ratio is pointed out by the author. Failure to recognize the importance of moisture control and what effect it has on cores is considered in this article. The article is closed by the suggestions of the best procedure to bake cores properly and uniformly. (Sa.)

Cupola

BLAST VOLUME. *"Optimum Blast Volume for Cupola Practice,"* N. Czyzewski, *Foundry Trade Journal,* vol. 61, no. 1195, July 13, 1939, pp. 21-22. This paper was presented at the International Foundry Congress in London. In this paper it is intended to show that by employing a good foundry coke in a quantity of 9 to 11 per cent and a normal charge of metal the optimum volume of the blast should be about 100 cubic m. per sq. m. per min. If on the contrary the working conditions of the cupola, the use of coke of not good quality the necessity for a very high temperature of the combustion gases leaving the cupola, etc., differ from normal condition, the optimum volume of blast will be somewhat different and will depend upon a series of factors affecting the operations of the cupola. The principal formula together with the results of investigations made by the author on cupolas are outlined. (Cu.)

REFRACTORIES. *"Selection and Testing of Cupola Refractories,"* by W. J. Rees, *Foundry Trade Journal,* vol. 61, no. 1197, July 27, 1939, pp. 63-66, 68. Cupolas are generally lined in one of three ways; with firebrick, bricks cut to shape from a natural silicious rock and a plastic or semi-plastic material, having either a silica or burned fireclay base, rammed around a former. Each of the above materials is discussed to full advantage, covering many points among which are: slag corrosion of fireclay, chemical compositions of firestone blocks and fusion points of alumina-silica. Properties of cupola lining materials are discussed: a table showing properties of two naturally-bonded refractory materials and another on effect of water content on shrinkage is included. Patching materials, mechanical grading of patching materials and influence of moisture on patching materials are just a few more of the various topics of this paper. A written and oral discussion of this paper presented at the International Foundry Congress concluded the article. (F.)

Cupola Operation

LAWS. *"Laws Governing Cupola Operation,"* by Massimo Barigozzi, *Foundry Trade Journal,* vol. 61, no. 1196, July 20, 1939, pp. 41-42. This is a rather technical paper and quite a study is made of Falk's general equation for the cupola. Presented before the International Foundry Congress by the author, this paper is based on Italian foundry practice. (F.)

Fuels

IRON AND STEEL. *"Fuels for the Iron and Steel Industry,"* by S. G. Ward, *Iron Age,* vol. 144, no. 4, July 27, 1939, pp. 26-31. This is an abstract of a lecture presented before the Staffordshire Iron and Steel Industry, England. Fuel is divided into three groups: solid, liquid and gaseous. Each of the above types are discussed, giving both their advantages and disadvantages for use. Combustion characteristics such as ignition temperature, limits of inflammability, rate of flame progation and flame temperature rule selection of the available fuel. The discussion on blast furnace brings out the author's opinion on combustion. As this paper was presented in England, most of the remarks are concerned about the English iron and steel mills and very little is said about mills or plants in this country. (Fu.)

Furnace

IMPROVEMENTS. *"Open-Hearth Improvements,"* by L. S. Longnecker, *Steel,* vol. 105, no. 7, August 14, 1939, pp. 44, 46 and 74. The four open-hearth improvements discussed are a suspended arch, increasing yield of roof refractories and eliminating front wall; a new type door with less exposed water-cooled surface; an auxiliary design of front wall burners; and a bulk-type charger handling entire charge in one operation. An estimate savings of $1.023 per ton of ingots may be afforded by the use of these new improvements as figured out in table 3. Bulk charging cut time per heat one-third. (F.)

Heat Treatment

HARDENING. *"Flame Hardened Lathe Beds,"* by P. A. Abe, *Metal Progress,* vol. 36, no. 1, July, 1939, pp. 49-52. Many experiments were attempted to bring about a lathe bed that would resist wear. About five years ago flame hardening was experimented with and found to be quite promising. After three and a half years of further experimenting, some of the numerous difficulties were solved, namely: distortion, getting the required hardness without any possibility of the hardened layer cracking, and the problem of grinding the long vee and flat way surfaces to the extremely close tolerances required. A combined carbon content of approximately 0.60 per cent is used in the castings. Cast iron is especially low in phosphorous and sulphur to avoid the occurrence of hard phosphides or soft, tender sulphide films. It was also found that the lower the hardening temperature the less distortion during flame hardening. (H.)

Heat Treating

TEMPERING. *"Improved Tempering," Steel,* vol. 105, no. 10, September 4, 1939, pp. 42, 44-46, 64. Successful operation of the first commercial austempering equipment shows that this process has important possibilities. Austempering imparts hardness to steel along with the added desirable characteristics of toughness and ductility. The process is outlined briefly, austempering involves heating the steel to a predetermined temperature until it becomes entirely austentic. The steel is then quenched immediately in a salt bath at a temperature within the range of 350 to 800° F., depending upon the type of steel being processed. It is held in the quench until the product is completely transformed to bainite. The work is then water quenched to room temperature. (H.T.)

Malleable Iron

CLEAN ANNEALING. *"Modern Equipment for Clean Annealing Malleable Iron,"* by W. F. Ross, *Industrial Heating,* vol. 6, no. 8, August, 1939, pp. 683-686, 688-690, 692. Today the malleable producers, large and small, have started a trend toward furnace equipment that is designed to decrease annealing time to a minimum. Formerly many hours were used in an annealing cycle and castings were uniformly satisfactory in regard to machining qualities; however, the retention of these satisfactory qualities plus the great advantages of a short malleableizing cycle brings about a big metallurgical problem. The greatest recent malleableizing developments have been in continuous furnace equipment. This type furnace is of the continuous type equipment, suitably divided into separately controlled heating, fast cooling and slow cooling zones, designed with provision for controlled atmosphere to eliminate the scaling of castings by oxidation, and so reducing the tare weight of supports, containers and packing. Two continuous pusher type furnaces are discussed. (1)

the 340 KW pusher type roller rail and (2) the 860 KW roller hearth type, giving full technical information on their operation and production. Pictures of the two furnaces are also shown. (M.)

OPEN-HEARTH MELTING. *"The Open-Hearth Furnace for Melting Malleable Cast Iron,"* by G. R. Shotton, *Foundry Trade Journal,* vol. 61, nos. 1197 and 1198, July 27, 1939, and August 3, 1939, pp. 58-59 and pp. 79-81. This article has endeavored to show the use of an open-hearth furnace for melting malleable cast iron. The high capital cost of this furnace is one of its disadvantages. When not in operation a temperature fairly near to melting temperature must be maintained, since the furnace is constructed of silica bricks. Violent fluctuations cause spalling of the bricks and shut-downs are more frequent. This type furnace can be operated continuously for long periods and will yield better results under such conditions. A close control of analysis can be obtained and if variations do occur it can be corrected before tapping. The molten metal can be superheated to suit foundry requirements by holding the charge in the furnace until the required temperature is reached. Due to the complex nature of the furnace a close supervision and technical control is needed. In the second part of the article there are numerous tables showing power costs, daily time table for two 10-ton heats, coal consumption for soaking periods and swill heats, fuel consumption on melting and total melting costs. (M.)

Materials Handling

CONVEYORS. *"Conveyorized," Steel,* vol. 105, no. 3, July 17, 1939, pp. 50, 52, 54, 81. High production porcelain enameling tends toward complete mechanization of handling operations. Each item to be porcelain enameled received the same treatment. An outline of the operations is as follows: after fabrication by means of stamping or forming to the desired shape, piercing of holes, forming of design, etc., the raw steel is pickled and cleaned to remove all oil, grease, dirt and dust from the surfaces and to prepare the steel surface to receive the enamel coat. The modernized plant discussed in the article is a typical example of mechanized handling in this industry. It features the continuous chain type of conveyors. (M.H.)

Non-Ferrous

ALUMINUM. *"Non-Ferrous Foundry Practice,"* J. Laing and R. T. Rolfe, *The Metal Industry* (London), vol. 54, no. 4, July 28, 1939, pp. 75-79. This article is the 27th and concluding one in this series. The authors continue their discussion of aluminum alloys under the following subjects: Alloys Containing Magnesium Silicide, Constitution and Heat Treatment of Magnesium Silicide Alloys, Aluminum Mold Technique, Ramming, Venting, Gating, Risers, Chills, Pouring Temperatures, General Defects in Aluminum Alloy Castings, Melting Practice and Alloying. Tables of data and drawings illustrating the described method of gating and risering are included. (N.F.)

ALUMINUM. *"Machining Aluminum and Its Alloys," The Metal Industry* (London), vol. 54, no. 7, August 18, 1939, pp. 149-150. This is a translation of an article which appeared in the July issue of "La Revue de l'aluminum et de ses Applications." The article deals with the use of carbide-tipped tools for machining aluminum and its alloys, giving details of the cutting angles, speeds, etc., used for different machining operations. The subjects discussed are characteristics of carbide-tipped tools, fitting the tips, positioning, turning, accuracy, milling, drilling, boring, lubrication and grinding the tips. (N.F.)

Radiography

IRON AND STEEL. *"Radiography in Iron and Steel Founding,"* by F. W. Rowe, *Foundry Trade Journal,* vol. 61, no. 1195, July 13, 1939, pp. 27-29. The examination of internal soundness by radiography with both x- and gamma-rays is the subject dealt with in this paper. General comments on the gradual development of radiography in the foundry field is told in the paper. Methods of operation and explanation of the machines are also given. This article is to be continued. (A.)

IRON AND STEEL. *"Radiography in Iron and Steel Founding,"* by F. W. Rowe, *Foundry Trade Journal,* vol. 61, no. 1196, July 20, 1939, pp. 43-47. This is the concluding section of this paper and particular attention is paid to radiography with gamma-rays. Principles of x-ray and gamma-ray are the same except that the electrical source of x-rays is now replaced by a small quantity of radio-active substance—usually radium sulphate. A few large radiograph negatives are shown and the author comments on their defects. (A.)

Safety and Hygiene

BRASS FOUNDRY. *"Safety Measures Pay Dividends in Brass Foundry,"* by M. A. Gimbel, *The Foundry,* vol. 67, no. 9, September, 1939, pp. 30-31, 74. Safety measures in this General Electric plant were carried out with the co-operation of the division of occupational disease prevention of the state department of labor and industry of Pennsylvania. Tests were made for dust, lead, mercury, zinc and other fumes. Other department problems were studied also. A gravity roller conveyor, 12 inches above the floor, makes it more comfortable for pourers. The chance of spilling and numerous injuries sustained during pouring are reduced to a minimum. Other improvements to lessen the chance of sickness while in contact with various fumes are eliminated by exhaust systems. These are just a few of the facts revealed in this paper. (Se.)

CLEANLINESS. *"Plant Housekeeping,"* by R. A. Brackett, *Steel,* vol. 105, no. 4, July 24, 1939, pp. 40-43. Installation of modern plant cleaning equipment in the Spencer Turbine Co., Hartford, Conn., illustrated that it not only improves the working conditions for the men but in more than one instance has been followed by a direct increase in production. It is not only a factor for increasing production but a savings in eliminating fire, explosion and dust hazards, a savings in cleaning floors and elimination of mechanical and physical defects due to dust and dirt. (He.)

Sand

DEFORMATION. *"Measure Deformation of Molding Sand,"* by H. W. Dietert and E. E. Woodliff, *The Foundry,* vol. 67, no. 9, September, 1939, pp. 28-29, 70. Water and type of bond to a great degree determine ductility or referred to as deformation. As sand grains deform little, if any, under the normal pressures used in foundries, amount of deformation possessed by a molding sand depends upon the bonding material. A graph is used to illustrate the use of various sands and what casting defects they cause. A clear, graphical picture of sand toughness is shown in one of the figures in this article. (Sa.)

QUALITY. *"Common Sense with Sand and Binders,"* by Ralph Wilbury, *Foundry Trade Journal,* vol. 61, no. 1198, August 3, 1939, p. 78. This short article discussed the use of sand and "plaster of paris" in the foundry. Binders used for molding sand and cores were for alloy steel castings. Cleaning room costs were reduced approximately 30 per cent. (S.)

Steel

DECARBURIZATION. *"Decarburization of Steel,"* by M. H. Mawhinney, *Iron Age,* vol. 144, no. 3, July 20, 1939, pp. 27-30, and vol. 144, no. 4, July 27, 1939, pp. 38-42. In the first section of a two-part article, the author described the effect of atmosphere, temperature and type of steel on oxidation, and all factors determining decarburization of steel in open furnaces. The purpose of this article is to contribute a small amount of additional evidence on this subject to an outline of the more important heating processes of the steel industry, particularly as a guide to the form in which additional data can be added in order to make it comparative and consequently more useful. The author discussed the various factors which affect the formation of scale in an open furnace, among which are fuel, furnace pressure, temperature, air-gas ratio, and type of burner. The various factors affecting decarburization are as follows: fuels, furnace pressure, temperature of steel, air-gas ratio, type of burners, per cent reduction after heating, time of temperature and steel analysis. The second part of this article had to do with specific data on decarburization in various types of steel heating furnaces. The study had been made on three furnaces: the burner-fired batch furnaces, continuous billet furnace and annealing furnaces. Atmosphere furnaces were also discussed by the author. (S.)

DRY-SAND PRACTICE. *"Notes on Dry-Sand Practice for Steel Castings,"* C. J. Dadswell and T. R. Walker, *Foundry Trade Journal,* vol. 61, no. 1199, August 10, 1939, pp. 103-107. A study of the various molding conditions in Europe and America are described, giving their reactions to the use of the many types of sands. Strength of core mixtures are discussed thoroughly, showing how each mixture reacted after heating. The importance of drying is also pointed out and 4 tests were taken. The tests taken are shown in chart form and explained by the author. Mold paints are also discussed. As this is an International Foundry Congress paper, the author is describing the foundry practice of Great Britain. (S.)

TRENDS. *"Trends in Alloy and Electric Steel Output,"* by E. F. Cone, *Metals and Alloys,* vol. 10, no. 8, August, 1939, pp. 255-257. It is believed that analysis of reliable production statistics are able to show significant trends. In this article an attempt has been made to reveal the progress in the demand for alloy steels in general, and the stainless in particular, based on the quantity made and hence to gage the importance of this branch of the steel industry. Alloy steel production is so intimately tied up with the electric steel industry that an analysis of the trend in the output of steel from electric furnaces is included. (S.)

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